



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

homologized with carpellary leaflets, the embryo sac otherwise originating in the tissues of the simple carpel), and both subclasses are further subdivided according to the number and character of their ovule coats, while the ultimate grouping of families, though to a certain extent dictated by grosser characters, is influenced largely by the results reached in late years by the students of systematic plant anatomy.

As might be expected, the sequence of families is greatly modified from that which represents the conclusions of the English and German schools, though of the two it naturally conforms more closely to the latter, by which a more consistent effort has been made to represent phylogenetic affinities as indicated by anatomical as well as more obvious structure.

Whatever may be the general verdict on the new basis of primary classification and its present exemplification, — and it is likely to find more opponents than supporters, — the author is to be congratulated on having presented his views in a suggestive and convenient form for the guidance of future investigators; and the attempts which are sure to be made both to strengthen and overthrow it by the histological taxonomists can but result in laying further foundation stones for a truly natural system of the flowering plants. T.

Are Bacteria Fungi? — In *Centralblatt f. Bakteriologie*, etc., 2te. Abt., Bd. iii, Nos. 11 and 12, Dr. Johan-Olsen argues that bacteria are simply one stage in the development of fungi and supports his text, *Zur Pleomorphismusfrage*, with two well-drawn plates. Unfortunately, some of his most striking examples are drawn from species of *Oospora* which mycologists for many years have classed as fungi, and whose only claim to be classed as bacteria is the fact that when their extremely tenuous hyphæ break up into conidia, or oidia, the latter closely resemble rod-shaped bacteria in size and form. These conidia, however, grow into genuine branched mycelia. Some of the other cases which he cites, *e.g.*, branched tubercle and diphtheria bacilli, may well be involution forms, as Dr. Migula has suggested, since they are usually found only in old cultures, sparingly, and under conditions unfavorable to the organism. More difficult to explain is his account of the change of the mycelium of *Dematium casei* into bacteria bearing endospores, the germination of which spores he succeeded in witnessing. Possibly Dr. Ol. Johan-Olsen was working with mixed cultures. Much is said of Dr. Brefeld's *System*, but if Dr. Johan-Olsen's culture methods are not a very decided improve-

ment on those of his master, which have been described to me in recent years by a number of people who have studied at Münster, and which are certainly very crude, then we are fully warranted in calling in question the results. One is the more inclined to do this because in another paragraph we are told that: "Almost all bacteria, which I have had in cultivation in recent years, form a branched mycelium in course of time, especially all bacilli." We are also rendered suspicious by the statement that species of *Aspergillus* and *Mucor* may appear in the form of *amœba*. It is possible, of course, that bacteria are only "incompletely known fungi," but up to this time the evidence is certainly not very conclusive, and to the writer it seems not at all improbable that they may have had quite a different origin—at least many of them.

ERWIN F. SMITH.

Dr. Bolander.—In *Erythea* for October, 1898, Willis L. Jepson writes interestingly of Dr. Henry N. Bolander, botanical explorer, who died in Portland, Oregon, Aug. 28, 1897. He was born in Germany, but most of his life was spent in Ohio and on the Pacific coast. He was educated for a clergyman, but through the influence of Leo Lesquereux his energies were turned into scientific channels. The article is accompanied by a half-tone picture of the botanist. Thirty-seven species of flowering plants were named after Dr. Bolander.

E. F. S.

The Costa Rica Flora.—The second volume of the *Primitiæ Floræ Costaricensis*, begun by Pittier and Durand, is continued by the first-named author alone. But Part I of this volume, concerned with the Polypetalæ, is from the pen of Capt. John Donnell Smith, whose work on the flora of Guatemala is everywhere well known. As might be expected, several species are here described for the first time. Descriptions of a number of species previously published in the *Botanical Gazette* are reprinted, for obvious reasons.

Urban's West Indian Flora.¹—The first fascicle of this work, with which Dr. Urban has been known to be occupied for some years past, reaches page 192, and is entirely devoted to a botanical bibliography of the West Indies. The botanical treatment itself is awaited with much eagerness.

T.

¹ Urban, I. *Symbolæ Antillanæ seu fundamenta floræ Indiæ occidentalis*, 1. 1. Berolini, Fratres Borntraeger, 1898.